

WEATHER OF THE ATLANTIC AND PACIFIC OCEANS

[By the Marine Division, Willis E. Hurd temporarily in charge]

NORTH ATLANTIC OCEAN, NOVEMBER, 1932

By WILLIS E. HURD

Atmospheric pressure.—As indicated by Table 1, the average pressures at the middle latitude centers of anti-cyclonic action, as shown by Bermuda and Horta, were about normal for November, 1932. The monthly range in pressure, however, exceeded 1 inch at these stations. Along the American coast from Nantucket to Belle Isle the average barometer was from 0.1 to 0.2 inch above the normal, and the European coast from Portugal to the Shetland Islands also gave abnormally high average pressures. At Lerwick the November range exceeded 2 inches.

The Iceland low, as indicated by Reykjavik, was a tenth of an inch below normal, and the November pressure extremes at this Iceland station were 30.50 inches on the 15th and 28.39 inches on the 22d.

TABLE 1.—Averages, departures, and extremes of atmospheric pressure (sea level) at selected stations for the North Atlantic Ocean and its shores, November, 1932

Stations	Average pressure	Departure	High-est	Date	Lowest	Date
	<i>Inches</i>	<i>Inch</i>	<i>Inches</i>		<i>Inches</i>	
Julianehaab, Greenland\	29.82	—	30.28	15, 28	29.37	4
Reykjavik, Iceland	29.50	—0.12	30.50	15	28.39	22
Lerwick, Shetland Islands	29.82	+ .12	30.75	13	28.63	23
Valencia, Ireland	30.03	+ .14	30.49	28	29.66	22
Lisbon, Portugal	30.12	+ .06	30.42	26	29.69	16
Madeira	30.04	+ .03	30.34	26, 27	29.57	15
Horta, Azores	30.13	+ .00	30.61	28	29.25	18
Belle Isle, Newfoundland	30.05	+ .17	30.46	17	29.32	6
Halifax, Nova Scotia	30.15	+ .20	30.78	28	29.54	1, 30
Nantucket	30.15	+ .10	30.74	4	29.55	19
Hatteras	30.13	+ .02	30.61	4	29.60	9
Bermuda	30.06	— .02	30.42	5	29.30	12
Turks Island	29.93	— .06	30.00	{ 20, 21, 25, 26 }	29.74	10
Key West	30.01	— .01	30.23	14	29.70	9
New Orleans	30.16	+ .06	30.52	28	29.83	10
Cape Gracias, Nicaragua	29.86	— .04	29.98	21	29.48	7

NOTE.—All data based on a. m. observations only with departures compiled from best available normals related to time of observation, except Hatteras, Key West, Nantucket, and New Orleans, which are 24-hour corrected means.

Cyclones and gales.—In northern waters storms, as a rule, ran in higher latitudes than normal for November, as was similarly true in October. Along the northern shipping routes the number of November gales with forces exceeding 8 showed very little if any increase over those of the preceding month, and the weather as a whole may be considered as less stormy than usual so far as it was affected by purely extratropical conditions. In American coastal waters north of the thirtieth parallel the number of gales was somewhat higher than the average for the month, and of these the greater part were due to a storm which first appeared as a shallow depression in the upper Gulf of Mexico on November 24. On the 26th this disturbance entered the Atlantic from South Carolina, attended by gales over the neighboring part of the sea. On the 27th and 28th it was causing fresh to whole gales over a considerable region north and west of Bermuda. On the 29th, central near 35° N., 65° W., it had acquired locally a force of 11, and on the 30th, south of Nova Scotia, similarly high wind forces occurred in its southern quadrants. (See Chart XI.)

Of other storms, specific mention may be made of one which caused gales of force 8 to 11 over a wide field west of the British Isles on the 9th to 11th, and with which one of the tropical cyclones of the month was merged.

Another was a cyclone which, originating on the 22d south of Newfoundland, moved northeastward with in-

creasing intensity, and on the 26th and 27th caused strong gales in British waters.

Tropical hurricanes.—The principal November cyclones of the North Atlantic were of tropical origin, and as their courses ran well into middle latitudes, trans-Atlantic shipping was much more seriously affected by them than by all the storms of extratropical origin.

The disastrous hurricane of the month was that which appeared as a depression east of the Antilles on October 30. In its course nearly across the Caribbean Sea until November 7, its northward swing across central Cuba on the 9th, and its passing of Bermuda on the 12th, it was for the most part a deep and intense cyclone. South of Nova Scotia, after combining partly with the lower extension of a cyclone centered far to the northward, it inclined more to easterly, passed the Azores on the 16th, with low barometer of 29.25 inches at Horta, and on the 19th lay as a depression over Spain.

The principal history of this hurricane, including its disastrous effect upon Cuba, is treated on p. 222 in this REVIEW. Allusion should be made, however, to the experience of the British motorship *Forresbank*, south-bound in the Caribbean. She hove to in the teeth of the gale on the morning of the 6th, in 17° N., 81° 11' W. "This," said the observer, Mr. Cameron, "was the last known position till Wednesday the 9th—17° 22' N., 79° 25' W." The lowest barometer reading on this ship was 27.96 inches (uncorrected), at 3 a. m. of the 8th. Vessels close to San Salvador Island on the 10th reported readings close down to 28 inches. Mr. Hagens, observer on the Dutch steamer *Binnendyk*, said that when in the most violent part of the storm on the 10th, "between 8 and 12 a. m. the barometer dropped about 20 millimeters, the largest drop on one watch in this writer's experience."

A pronounced effect of this hurricane was felt in the Canal Zone on November 6. The total wind movement at Balboa Heights, midnight to midnight of that date, was 543 miles, which is a record total for the month for the period 1908–1932. At Cristobal on the 7th the barometer fell to 29.64 inches, which is within 0.01 inch of the record low in 25 years. Ships from the hurricane belt were later reported arriving here in a battered condition.

While this storm was in progress, a second hurricane sprang up in lower middle Atlantic. It was first observed, with moderate gales, on the 3d, central near 15° N., 48° W. By a devious route it cut its way northward against a bank of high pressure, gathering energy. Late on the 7th the American steamer *West Campgaw* reported a northeast gale, force 11, barometer 28.73, near 29° N., 48° W. By the 10th the cyclone had advanced on a northeasterly course to the Azores, attended by hurricane winds in southern quadrants. On the 11th, to the northward, it coalesced with a disturbance of higher latitudes.

Charts VIII, IX, and X, for November 7, 9, and 11, show both of these hurricanes in important stages of their existence. Chart X also shows a development of the extensive northeastern cyclone with which the mid-longitude hurricane of the 3d–10th had just merged.

Fog.—Much less than the normal amount of fog for November occurred this month, and none was reported to the eastward of the meridian of 35° W. In Newfoundland waters and on the Grand Banks it was reported altogether on 4 days, south of Nova Scotia on 7 days, and along the coast of the United States between 35° and 45° N. on 1 to 2 days.

Waterspout damage.—An Exchange Telegraph dispatch from Valencia, Spain, dated November 11, said that 10 Spanish fishermen were believed to have perished when

their smack was capsized by a waterspout. Three of the bodies were recovered.

OCEAN GALES AND STORMS, NOVEMBER, 1932

Vessel	Voyage		Position at time of lowest barometer		Gale began	Time of lowest barometer	Gale ended	Lowest barometer	Direction of wind when gale began	Direction and force of wind at time of lowest barometer	Direction of wind when gale ended	Direction and highest force of wind	Shifts of wind near time of lowest barometer
	From—	To—	Latitude	Longitude									
NORTH ATLANTIC OCEAN													
Themisto, Du. S. S.	Durban	Montreal	49 28 N	64 50 W	Nov. 1	6 a., Nov. 2	Nov. 3	29.55	SE	Var. 2	NW	W, 10	SE-W-NW.
Gonzenheim, Ger. S. S.	Newcastle on Tyne	Botwood, Newfoundland	51 52 N	49 43 W	Nov. 2	6 a., 3		29.42	WSW	SW, 7		S, 10	SSW-SW.
Shenandoah, Am. T. S.	Preston, England	New York	46 47 N	41 20 W	do	Noon, 2	Nov. 5	29.50	NW	NW, 7	WNW	NW, 10	NW-WNW.
Marie Leonhardt, Ger. S. S.	Bremen	Searsport, Me.	45 31 N	57 00 W	Nov. 4	1 p., 4	Nov. 4	30.34	NW	NW, —	NW	NW, 10	
Forresbank, Br. M. V.	Cornerbrook	Canal Zone	17 00 N	80 00 W	Nov. 5	3 a., 8	Nov. 9	27.96	NE	NW, 12	SW	NE, 12	NE-NW-SW.
Atago Maru, Jap. M. V.	Galveston	Cristobal	15 36 N	81 28 W	Nov. 6	Noon, 7	Nov. 8	28.94	NNE	NW, 11	SE	WNW, 12	N-NW.
Changinola, Br. S. S.	Swansea	Kingston	30 20 N	47 54 W	do	4 a., 7	do	29.37	E	NE, 8	NNW	NNE, 9	Steady.
Steel Engineer, Am. S. S.	Colon	Houston	Colon breakwater		Nov. 7	Noon, 7	Nov. 9	29.75	SSE	SSE, 6	WSW	—, 9	SSE-NW.
Hazelwood, Br. S. S.	Swansea	Montreal	53 54 N	31 50 W	Nov. 8	—, 10	Nov. 11	28.99	W	SW, 9	NW	SSW, 10	SSW-SW-W.
Virginia, Hond. S. S.	Boston	Jamaica	18 12 N	76 24 W	do	Noon, —	Nov. 10	29.57	SE	SE, 8	NNW	W, 12	S-NW.
Point Sur, Am. S. S.	Lake Charles, La.	Cristobal	21 11 N	83 40 W	do	1 a., 9	Nov. 9	29.64	NE	NNW, 7		—, 10	NE-SE-NW.
Dresden, Ger. S. S.	New York	Queenstown	51 04 N	19 30 W	Nov. 9	4 p., 9	Nov. 11	29.15	SSW	ESE, 12	N	N, 12	
Black Gull, Am. S. S.	do	Antwerp	49 44 N	16 00 W	do	6 a., 11	do	29.18	S	—	SW	S, 12	S-SW.
El Estero, Am. S. S.	Galveston	Boston	40 50 N	71 00 W	do	8 a., 10	Nov. 10	29.51	NE	E, 8	S	E, 11	NE-E-S.
Alexandre Andre, Belg. M. T.	Manchester	Baytown	25 17 N	71 25 W	Nov. 10	8 p., 10	Nov. 11	28.50	SE	SE, 10	WNW	NW, 10	SE-W-NW.
Excalibur, Am. S. S.	Mediterranean ports	New York	41 40 N	36 10 W	do	2 p., 10	Nov. 12	29.14	SSE	SSE, —		NNW, 10	SSE-NNE.
Nevada, Fr. S. S.	Anvers	New Orleans	36 43 N	29 40 W	do	11 a., 10	Nov. 11	28.86	S	WNW, 12	NW	—, 12	Steady.
Oakman, Am. S. S.	Rotterdam	do	27 33 N	68 50 W	Nov. 11	4 p., 11	Nov. 12	28.73	SE	S, 12	WNW	WSW, 12	S-SSW.
Alberta, Ital. S. S.	Houston	Palermo	39 18 N	52 10 W	Nov. 13	8 a., 13	Nov. 13	29.39	S	SSW, 10	W	SSW, 10	S-SSW-SW.
Bergensfjord, Nor. S. S.	Beyen	New York	51 29 N	44 00 W	Nov. 14	8 a., 14	Nov. 15	29.58	N	—	NNW	N, 9	Steady.
Europa, Ger. S. S.	English Channel	do	46 03 N	40 00 W	Nov. 15	3 a., 15	do	29.63	NW	NW, 7	NNW	NW, 11	Do.
Yselhaven, Du. S. S.	Mobile	Bremen	41 54 N	43 55 W	do	4 a., 16	Nov. 16	29.87	N	NNW, 11	N	NNW, 11	Do.
Adria, Ger. S. S.	Danzig	Baltimore	56 07 N	23 09 W	Nov. 21	1 a., 22	Nov. 23	29.43	W	W, 10	S	W, 11	W-WSW.
Fernmoor, Nor. M. S.	Hamburg	Canal Zone	51 50 N	2 29 E	Nov. 22	8 p., 22	Nov. 24	29.54	W	SW, 9	WNW	SW, 11	SW-NW.
Independence Hall, Am. S. S.	Bordeaux	New York	45 39 N	47 23 W	Nov. 23	2 p., 23	do	29.68	S	S, 7	NW	NNW, 10	SW-W-NNW.
Cold Harbor, Am. S. S.	Liverpool	Boston	51 17 N	11 00 W	Nov. 24	11 a., 24	Nov. 27	29.55	W	W, 7	W	NW, 10	W-NW.
President Roosevelt, Am. S. S.	Hamburg	New York	51 20 N	12 18 W	Nov. 25	2 a., 26	do	29.68	SW	SW, 8	NW	W, 10	
Solana, Am. S. S.	New York	San Francisco	32 29 N	74 00 W	do	11 a., 27	do	29.87	N	NNE, 8	NE	NNE, 9	Steady.
Independence Hall, Am. S. S.	Bordeaux	New York	42 18 N	63 05 W	Nov. 26	7 p., 26	Nov. 28	29.72	N	N, 7	NE	N, 9	N-NE.
San Juan, Am. S. S.	New York	San Juan	31 18 N	71 07 W	do	8 p., 28	do	29.90	NNE	NE, 8	NE	NE, 10	Steady.
Executive, Am. S. S.	Lisbon	New York	36 30 N	66 00 W	do	2 p., 29	Nov. 30	29.30	SSE	N, 10	NW	NW, 11	NE-NW.
Luna, Du. S. S.	Maracaibo	do	32 25 N	75 00 W	Nov. 27	10 p., 27	Nov. 28	29.88	NE	NE, 5	NE	NE, 11	
Roma, Ital. S. S.	Gibraltar	do	38 12 N	55 42 W	Nov. 28	2 a., 28	Nov. 30	29.89	NE	NNE, 9	NW	NNW, 9	N-NNW.
Chincha, Am. S. S.	Cape Town	St. John	40 00 N	60 30 W	Nov. 30	2 a., 30	Dec. 1	29.78	SSE	SSE, 7	SW	SSW, 9	SSE-SW.
NORTH PACIFIC OCEAN													
Iwatesan Maru, Jap. S. S.	San Francisco	Osaka, Japan	45 50 N	159 00 E	Nov. 2	1 p., 2	Nov. 2	29.54	SW	W, 9	WNW	W, 9	4 pts.
Tacoma, Am. S. S.	Tabaco, P. I.	Los Angeles	38 33 N	134 45 W	Nov. 3	9.30 p., 3	Nov. 3	29.67	SSE	S, 10	SSW	S, 10	S-SSW.
Kurama Maru, Jap. M. S.	Yokohama	do	40 30 N	133 40 W	do	10 p., 3	Nov. 4	29.49	WSW	S, 10	WSW	S, 11	S-SW.
Batoe, Du. S. S.	Ternate, D. E. I.	Portland, Oreg.	42 35 N	129 25 W	do	5 —, 4	Nov. 5	29.46	S	SW, 8	SSE	S, 9	S-SW-W.
Edda, Ital. S. S.	Portland, Oreg.	Balboa	40 58 N	125 07 W	Nov. 4	3 p., 3	Nov. 4	29.78	SSE	S, 9	S	S, 9	
Empress of Russia, Can. S. S.	Vancouver	Yokohama	52 02 N	142 10 W	Nov. 7	2.30 p., 7	Nov. 8	28.81	ESE	WSW, 9	W	WSW, 9	SSW-WSW-W.
President Cleveland, Am. S. S.	Victoria	do	43 52 N	152 09 E	do	12 a., 8	Nov. 9	29.31	ESE	SSW, 8	WSW	WSW, 9	SSW-SW-W.
Ayaha Maru, Jap. S. S.	Milke	Vancouver	50 50 N	162 30 W	Nov. 8	6 a., 9	Nov. 10	28.88	N	N, 11	NE	N, 12	N-NE.
Do	do	do	50 55 N	154 35 W	Nov. 10	1 a., 12	Nov. 12	29.14	W	WSW, 8	WNW	WSW, 8	WSW-SW.
President Jefferson, Am. S. S.	Yokohama	Puget Sound	50 00 N	155 50 W	Nov. 12	10 a., 12	Nov. 13	29.47	WNW	WNW, 8	WNW	WNW, 9	Steady.
Yarraville, Br. T. S.	Shanghai	San Francisco	42 22 N	169 12 W	do	2 p., 14	Nov. 14	28.49	ENE	S, 2	SSE	NE, 8	ENE-NE-S.
Hikawa Maru, Jap. M. S.	Vancouver	Yokohama	42 36 N	152 53 E	Nov. 13	6 a., 14	do	28.90	ESE	W, —	NW	—, 12	NW.
Edda, Ital. S. S.	Portland, Oreg.	Balboa	14 10 N	96 56 W	do	8 p., 13	do	29.86	NE	ENE, —	N	NNE, 9	
Empress of Asia, Can. S. S.	Yokohama	Vancouver	37 27 N	145 23 E	do	Noon, 13	Nov. 15	29.88	NNW	NNW, 8	NNE	NNW, 9	NNW-N.
Yeiyo Maru, Jap. Tank.	San Luis Obispo	Tokuyama	40 53 N	159 15 E	do	11 p., 13	Nov. 14	28.62	SE	WNW, 8	NNE	ESE, 10	W-WNW-NW.
California, Am. Tank	San Pedro	Taku Bar, China	32 00 N	137 00 E	do	2.10 p., 14	Nov. 15	28.31	ENE	SE, 12	WNW	NW, 12	SE-NW.
San Diego Maru, Jap. T.	Los Angeles	Yokohama	31 21 N	171 58 W	do	2 p., 14	do	29.26	SW	W, 7	W	SSW, 8	S-SW-W.
Kinkasan Maru, Jap. S. S.	Yokohama	Honolulu	33 56 N	169 56 E	do	4 p., 14	Nov. 16	29.47	SW	WNW, 9	N	NW, 9	SW-S-W.
Silverbelle, Br. M. V.	Manila	Los Angeles	43 50 N	166 00 W	do	4 p., 14	Nov. 17	29.75	NNE	E, 8	S	S, 9	NNE-E-SE.
President Hayes, Am. S. S.	San Francisco	Honolulu and Kobe	33 12 N	144 44 E	Nov. 14	Noon, 15	Nov. 15	29.35	E	W, —	WNW	—, 10	
San Luis Maru, Jap. T.	Monterey	Yokohama	34 55 N	140 22 E	do	0.30 a., 15	do	28.09	E	S, 11	NW	S, 11	SE-S-SW.
Empress of Russia, Can. S. S.	Vancouver	do	42 10 N	146 15 E	Nov. 15	5 p., 15	Nov. 16	29.15	ESE	NE, 9	W	N, 10	ENE-NE-N.
Oregon, Am. S. S.	Vladivostok	San Francisco	44 23 N	152 15 E	do	10 p., 16	Nov. 17	29.30	SE	W, 8	W	NE, 10	
Ensley City, Am. S. S.	Balboa	Los Angeles	14 25 N	94 01 W	Nov. 19	4 p., 19	Nov. 20	29.83	N	N, 8	NNE	NNE, 8	N-NNE.
Alaska, Am. S. S.	Seattle	Seward, Alaska	60 30 N	146 40 W	Nov. 24	8 a., 24	Nov. 25	28.84	NE	NE, 7	SSE	NE, 9	SSE-NE.
President Madison, Am. S. S.	Yokohama	Victoria	50 00 N	151 00 W	do	4 p., 26	Nov. 26	29.41	W	N, 8	N	NNW, 9	W-NW-N.
Do	do	do	50 00 N	139 40 W	Nov. 27	6 p., 27	Nov. 27	29.30	NNE	NW, 10	WNW	NW, 10	NNE-N-NW.
China Arrow, Am. Tank	Balboa	San Pedro	15 10 N	93 09 W	Nov. 28	5 p., 28	Nov. 29	29.85	N	N, 5	N	N, 9	Steady.
Mojave, Am. Tank	Portland, Oreg.	Port San Luis	43 00 N	124 49 W	do	4 a., 29	do	29.64	SSE	S, 8	S	S, 8	SSE-S.
Ohioan, Am. S. S.	New York	Los Angeles	15 00 N	94 00 W	Nov. 30	6 a., 30	Nov. 30	29.91	NNW	N, 6	ENE	NNW, 9	
Golden Sun, Am. S. S.	Otaru	San Francisco	49 13 N	176 50 W	Nov. 29	10 p., 29	Dec. 1	28.81	SW	SW, 5	W	W, 8	Steady.

1 Barometer uncorrected.

2 Approximate.